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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

STAFIRA, MICHAEL PATRICK

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/936,924

Applicant(s)

ULRICHSEN ET AL.

Examiner

Michael P. Stafira

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 66-124 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 110-113 and 117-119 is/are allowed.
- 6) ☒ Claim(s) 66, 67, 69, 70, 73, 78-83, 85-91, 95, 96, 99-109, 114-116 and 120-124 is/are rejected.
- 7) ☒ Claim(s) 68, 71, 72, 74-77, 84, 92-94, 97 and 98 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).

Art Unit: 2877

- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

2. The spacing of the lines of the specification is such as to make reading and entry of amendments difficult. New application papers with lines double spaced on good quality paper are required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 66,86,101 are rejected under 35 U.S.C. 102(e) as being anticipated by Ulrichsen et al. ('677).

Art Unit: 2877

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Claim 66, 86, 101

Ulrichsen et al. ('677) discloses emitting means (Fig. 2, Ref. 105) serving to emit a detection medium (See Fig. 2), which comprises electromagnetic radiation (Col. 11-12, lines 56-6), to be active at said matter (See Fig. 2), receiving means in the form of a rotary polygonal mirror (Fig. 2, Ref. 108) arranged to receive from a multiplicity of detection zones at said matter a detection medium which has been varied by variations in said matter (Col. 12, lines 30-67), a plurality of detecting means (Fig. 2, Ref. 120) serving to receive the varied medium by reflection from the mirror (Fig. 2, Ref. 108), to detect respective wavelengths of said varied medium substantially simultaneously (Col. 11, lines 55-67), and to generate detection data in respect of said wavelengths substantially simultaneously and in dependence upon the variations in said medium (Col. 9, lines 37-56), and data obtaining means connected to said detecting means and serving to obtain said detection data therefrom (Col. 9-10, lines 37-25), the arrangement being such that the beams of the varied medium which are received at said detecting means and emanate from the respective detection zones travel along respective paths from said matter to said mirror which paths continuously with respect to each other from said matter

Art Unit: 2877

converge to said mirror and do not substantially coincide with any significant part of the path of the emitted detection medium from the emitting means to the matter (See Fig. 2).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 67,87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulrichsen et al. ('677) as applied to claim 66 above, and further in view of WO 98/44335.

Claim 67, 87

Ulrichsen et al. ('677) substantially teaches the claimed invention except that it does not show the mirror is arranged to receive the varied medium directly from the matter. WO 98/44335 shows that it is known to provide a mirror (Fig. 10, Ref. 4) to receive varied medium directly from the matter (Fig. 10, Ref. 27) for an apparatus detecting irregularities in a product. It would have been obvious to combine the device of Ulrichsen et al. ('677) with the arranged mirror of WO 98/44335 for the purpose of providing direct view of the matter, therefore increasing the sensitivity of the measurement.

7. Claims 69,70,73,78-83,88,89,95,96 are rejected under 35 U.S.C. 102(e) as being anticipated by Ulrichsen et al. ('677).

Claim 69, 88

Art Unit: 2877

Ulrichsen et al. ('677) discloses that the emitting means is arranged to emit said medium in the form of a scanning beam which scans said detection zones (See Fig. 2).

Claim 70, 89

The reference of Ulrichsen et al. ('677) further discloses the emitting means emits said medium in the form of a plurality of scanning beams which are co-extensive with each other and which scan said detection zones (See Fig. 2).

Claim 73, 95

Ulrichsen et al. ('677) further discloses the emitting means (Fig. 2, Ref. 105) and said rotary polygonal mirror (Fig. 2, Ref. 106) are arranged so as to be located at respective opposite sides of said matter (See Fig. 2), the further comprising shielding means (Fig. 2, Ref. 107) arranged to prevent said detecting means from receiving the medium directly from said emitting means (See Fig. 2).

Claim 78

The reference of Ulrichsen et al. ('677) further discloses a detection station, which comprises the rotary polygonal mirror (Fig. 2, Ref. 108) and the detecting means and through which said matter advances in a feed direction (Fig. 2, Ref. 104).

Claim 79

Ulrichsen et al. ('677) further discloses the rotary polygonal mirror (Fig. 2, Ref. 108) has its axis of rotation at substantially the axis of its polygon and extending in said feed direction (See Fig. 2).

Art Unit: 2877

Claim 80

Ulrichsen et al. ('677) further discloses the emitting means (Fig. 2, Ref. 105) is arranged to emit said medium in the form of a scanning beam (Fig. 2, Ref. 121) which scans said detection zones, and wherein the scanning beam (Fig. 2, Ref. 121) scans said matter transversely of said feed direction (Fig. 2, Ref 104).

Claim 81, 96

The reference of Ulrichsen et al. ('677) further discloses the arrangement is such that said matter falls freely through said detection station (See Fig. 2).

Claim 82

Ulrichsen et al. ('677) discloses a distributing means (Fig. 2, Ref. 116) arranged to cause said matter to fall freely in a curved distribution around a vertical axis (See Fig. 2).

Claim 83

The reference of Ulrichsen et al. ('677) further discloses the distributing means (Fig. 2, Ref. 116) is arranged to cause said distribution to be at a substantially constant radius from said vertical axis (See Fig. 2).

8. Claims 85, 100, 122 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulrichsen et al. ('677).

Claim 85, 100, 122

Ulrichsen et al. ('677) discloses the claimed invention except for the use of visible light wavelength as the detection medium. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Ulrichsen et al. ('677) with the visible

Art Unit: 2877

light wavelength since it was well known in the art that using visible wavelengths allows one to inspect different variations of matter, therefore increasing the measurement parameters of the apparatus.

9. Claims 90 are rejected under 35 U.S.C. 102(e) as being anticipated by Ulrichsen et al. ('677).

Claim 90

The reference of Ulrichsen et al. ('677) further discloses each detection zone is in the form of a group of detection spots (Fig. 2, Ref. 121), and wherein the varied medium from all of the detection spots in each group is received substantially simultaneously at said rotary polygonal (Fig. 2, Ref. 108).

10. Claims 91, 115 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulrichsen et al. ('677).

Claim 91, 115

Ulrichsen et al. ('677) discloses the claimed invention except for the matter being granulates. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Ulrichsen et al. ('677) with the granulates since it was well known in the art that measuring granulates increases the sorting capability of the apparatus, therefore producing a better product.

Art Unit: 2877

11. Claims 99,102-109,114,116,120,121,123 are rejected under 35 U.S.C. 102(e) as being anticipated by Ulrichsen et al. ('677).

Claim 99

Ulrichsen et al. ('677) discloses an object surfaces of which are orientated differently from each other, said medium being varied in its intensity in dependence upon the respective orientations of said surfaces, and said detection data is used to obtain an indication of a dimension of said object (See Fig. 2).

Claim 102

Ulrichsen et al. ('677) further discloses a detection station which, comprises the rotary polygonal mirror (Fig. 2, Ref. 108) and the detecting means and through which said matter advances in a feed direction (Fig. 2, Ref. 104), the mirror having its axis or rotation at substantially the axis of its polygon and extending in said feed direction (See Fig. 2).

Claim 103

Ulrichsen et al. ('677) discloses emitting means (Fig. 2, Ref. 105) serving to emit a detection medium, which comprises electromagnetic radiation, to be active at said matter, a rotary polygonal mirror (Fig. 2, Ref. 108) arranged to receive from a multiplicity of detection zones (Fig. 2, Ref. 121) at said matter detection medium varied by variations in said matter, at least one folding mirror (Fig. 2, Ref. 107) by way of which said rotary polygonal mirror (Fig. 2, Ref. 108) receives the varied medium, detecting means (Fig. 2, Ref. 120) serving to receive the varied medium by reflection from the rotary polygonal mirror (Fig. 2, Ref. 108), to detect a plurality of wavelengths of said varied medium substantially simultaneously, and to generate detection data in respect of said plurality of wavelengths substantially simultaneously and in

Art Unit: 2877

dependence upon the variations in said medium (Col. 11-12, lines 55-6), and data-obtaining means connected to said detecting means and serving to obtain said detection data therefrom, the or each folding mirror being arranged to reflect varied medium from at least some of said multiplicity of detection zones (Col. 9-10, lines 37-26).

Claim 104

Ulrichsen et al. ('677) discloses emitting a beam (Fig. 2, Ref. 105) of detection medium so that said beam scans said matter (Fig. 2, Ref. 121), said medium being varied by variations in the composition of said matter, and one or by passing said medium through said matter and through being reflected from said matter, receiving the varied medium at detecting means, generating detection data from said detecting means in dependence upon the variations in said medium, and identifying at least one of said materials from said data (Col. 9-10, lines 37-26)

Claim 105

The reference of Ulrichsen et al. ('677) further discloses the medium is varied (See Fig. 2) through being reflected from the matter and detecting means is prevented (Fig. 2, Ref. 107) from receiving direct reflection of the emitted beam.

Claim 106

Ulrichsen et al. ('677) further discloses a emitting co-extensively with said beam, a second beam (Fig. 2, Ref. 140) of detection medium so that said second beam also scans said matter (See Fig. 2).

Claim 107

Ulrichsen et al. ('677) discloses emitting means (Fig. 2, Ref. 105) serving to emit a scanning beam (Fig. 2, Ref. 121) of detection medium to scan said matter (See Fig. 2), receiving

Art Unit: 2877

means (Fig. 2, Ref. 120) arranged to receive detection medium varied by variations in the composition of said matter (Col. 9-10, lines 36-26), detecting means serving to generate detection data in dependence upon the variations in said medium, and data-obtaining means connected to said detecting means and serving to obtain said detection data therefrom and to identify at least one of said materials from said data (Col. 11-12, lines 55-56).

Claim 108

Ulrichsen et al. ('677) further discloses the emitting means (Fig. 2, Ref. 105) and said receiving means (Fig. 2, Ref. 120) are arranged to be located at a common side of said matter (See Fig. 2), and said receiving means is off-set relative to a direct reflection path of said beam (See Fig. 2).

Claim 109

The reference of Ulrichsen et al. ('677) further discloses said emitting means (Fig. 2, Ref. 105) serves to emit, co-extensively with said beam, a second beam (Fig. 2, Ref. 139) of detection medium to scan said matter (See Fig. 2).

Claim 114

Ulrichsen et al. ('677) discloses emitting (Fig. 2, Ref. 105) a detection medium to be active at said matter, said medium being varied by variations in the composition of said matter, receiving the varied medium (See Fig. 2), receiving means (Fig. 2, Ref. 120) from groups of detection spots (Fig. 2, Ref. 121) at a said matter, whereof each group contains a plurality of said detection spots and provides one of said detection zones (See Fig. 2), with the varied medium from all of the detection spots in each group being received substantially simultaneously, generating detection data for each detection zone in dependence upon the variations in said

Art Unit: 2877

medium at the detection zone, and identifying at least one of said materials from said data (Col. 9-10, lines 36-26).

Claim 116

Ulrichsen et al. ('677) discloses an emitting means (Fig. 2, Ref. 105) serving to emit a detection medium to be active at said matter (See Fig. 2), receiving means (Fig. 2, Ref. 120) serving to receive detection medium varied by variations in the composition of said matter from, in turn, groups or detection spots at said matter (See Fig. 2), whereof each group contains a plurality of said detection spots (Fig. 2, Ref. 121) and provides one of said detection zones (See Fig. 2), with the varied medium from all of the detection spots in each group being received substantially simultaneously, detecting means (Fig. 2, Ref. 120) serving to generate detection data in dependence upon the variations in said medium at each detection zone, and data-obtaining means connected to said detecting means and serving to obtain said detection data therefrom and to identify at least one of said materials from said data (Col. 9-10, lines 36-26).

Claim 120

Ulrichsen et al. ('677) discloses an emitting means (Fig. 2, Ref. 105) serving to emit a detection medium (Fig. 2, Ref. 120), which comprises radiation, as a scanning beam (Fig. 2, Ref. 121) to irradiate a path over said matter, inspecting means arranged to inspect the irradiated path at an oblique angle to said matter, and ascertaining means arranged to ascertain from that inspection the general profile of that path (Col. 9-10, lines 36-26).

Claim 121

Ulrichsen et al. ('677) discloses an emitting means (Fig. 2, Ref. 105) a detection medium (Fig. 2, Ref. 120), which comprises radiation, to be active at said matter, said medium being

Art Unit: 2877

varied by variations in said matter (See Fig. 2), at least part of the emitted medium passing through said matter and the varied medium which has passed through said matter being received at detecting means (Fig. 2, Ref. 120), and preventing said detecting means (Fig. 2, Ref. 120) from receiving the medium directly from the emitting means (Fig. 2, Ref. 105).

Claim 123

Ulrichsen et al. ('677) discloses an emitting means (Fig. 2, Ref. 105) serving to emit a detection medium (See Fig. 2), which comprises radiation, to be active at said matter, detecting means (Fig. 2, Ref. 120) arranged to receive, by passage of the medium through said matter (See Fig. 2), detection medium variations in said matter, and shielding means (Fig. 2, Ref. 107) arranged to prevent the detecting means from receiving the medium directly from the emitting means (See Fig. 2).

12. Claim 124 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulrichsen et al. ('677).

Ulrichsen et al. ('677) discloses the claimed invention except for a Fresnel lens located between the emitting and the detecting means. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Ulrichsen et al. ('677) with the location of the Fresnel lens since it was well known in the art that the use of a Fresnel lens increases the sensitivity of the light beam therefore making the measurements more accurate.

Allowable Subject Matter

13. Claims 110-113, 117-119 are allowed over the prior art of record.
14. Claims 68, 71, 72, 74-77, 84, 92-94, 97, 98 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
15. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 110, 113, the prior art fails to disclose or make obvious a method or apparatus of automatically inspecting matter for varying compositions having the step of using a camera to detect spatial characteristics of the objects and generating data dependence upon the spatial characteristics, and in combination with the other recited limitations of claim 113. Claims 111, 112 are allowed by the virtue of dependency on the allowed claim 110.


Regarding claim 117, the prior art fails to disclose or make obvious an apparatus for automatically inspecting a stream of matter having a first and second receiving means of the respective first and second inspection arrangement separate from each other and arranged to receive from the matter detection medium varied by variations in the matter, and in combination with the other recited limitations of claim 117. Claims 118, 119 are allowed by the virtue of dependency on the allowed claim 117.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 703-308-4837. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

Art Unit: 2877

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 703-308-4881. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Michael P. Stafira
Primary Examiner
Art Unit 2877

November 5, 2003